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09/695,951	10/25/2000	Mark T. Cranna	97309.00045	4713
21832 7590 01/23/2008 MCCARTER & ENGLISH LLP CITYPLACE I 185 ASYLUM STREET HARTFORD, CT 06103			EXAMINER DEXTER, CLARK F	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/695,951

Applicant(s)

CRANNA ET AL.

Examiner

Clark F. Dexter

Art Unit

3724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-14 and 21-49 is/are pending in the application.
- 4a) Of the above claim(s) 41-47 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-14 is/are allowed.
- 6) ☒ Claim(s) 1-5,7-11,21-40,48 and 49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

1. The amendments filed on May 22, 2007 and October 12, 2007 have been entered.

### *Specification*

2. The disclosure is objected to because of the following informalities:

On page 5, line 10, "17, 17', etc." should be changed to --17, 17', 17", etc.--.

In the replacement paragraph filed on November 27, 2002 for the paragraph bridging pages 6-7 of the specification, the use of "below" is unclear and the paragraph should be rewritten as follows:

-- It will be understood by one of ordinary skill in the pertinent art that the location and dimensions of the shelf 30, 30' affects the functionality of the shelf in removing dust. For simplicity, the following will use tooth 17' for an example in describing the location of the shelf 30'; however, it will be understood that this description may be equally applicable to all teeth disposed on the band saw blade 10. As shown in FIG. 2, the distance between the tip 20' and shelf tip 36' is defined as "S1," and the distance between the tip 20' and the bend plane 18 is defined as "B". Also, the distance between the tip 20' and the curvilinear base surface 26 is defined as "D". If S1 is set equal to or greater than [[below]] B, then the shelf 30' will not be in a proper location to "catch" and remove the dust cut from the kerf wall 38. Specifically, a dust gap "DG" is defined between a lateral point 40' of the tooth 17' (which also establishes the kerf wall 38) and

a side surface 42 at the base of the band saw blade 10. Effectively, the shelf 30' reduces the size of the dust gap or creates an effective dust gap "EDG" that is substantially less than DG.--.

In the replacement paragraph filed on November 27, 2002 for the paragraph that bridges pages 9-10 of the specification, the subject matter directed to the relief angle is unclear and the paragraph should be rewritten as follows:

-- The band saw blade 210 is generally similar to the band saw blade 10 of FIGS. 1-3; however, each set tooth 217', 217", etc. further includes a relief portion 244', 244", respectively, formed on the upper corner of the tooth on the side facing the respective kerf wall 238. As illustrated in FIG. 5, the relief portions 244', 244" each define a relief angle RA', RA" ["RA"] (shown in FIG. 5). The relief portions form an angle which is preferably within the range of between approximately 0° and approximately 2° with respect to a plane defined by the unset tooth 220. The relief portions 244', 244" function to locate the respective shelf 230 closer to the kerf wall 238 to thereby further reduce the dust gap DG to DG1 and, in turn, decrease the effective dust gap from EDG to EDG1. The relief portion may also define a tangential angle "TA" (shown in FIG. 6). In this way, the edge is relieved to reduce the effects of friction during cutting of a work piece (not shown). The angle TA is preferably within the range of between approximately 3° and approximately 6° with respect to a plane defined by the side of the blade body 210. It will be understood that the dimensions and interrelationship of S1 and B, as described above, applies to the current embodiment as well. The straight or

unset tooth 220 provided in this embodiment also includes a shelf 230 similar to that described above.--.

Appropriate correction is required.

### ***Claim Objections***

3. Claims 12-14 are objected to because of the following informalities:

Claims 12-14 are not sufficiently clear, and it is suggested to rewrite these claims as follows:

-- 12. (Currently amended) A wood cutting band saw blade that when cutting wood produces saw dust and forms a kerf, comprising:

a cutting edge defined by a plurality of teeth spaced relative to each other, and a substantially planar back edge located on an opposite side of the band saw blade relative to the cutting edge, the plurality of teeth comprising a plurality of set teeth, each set tooth defining a tip, a bend plane from which the set tooth is set, the bend plane extending substantially parallel to the back edge of the band saw blade, and a shelf located on a front portion of each set tooth with respect to a cutting direction of the band saw blade and exposed during cutting, the shelf located at least partially between the tip and the bend plane for reducing saw dust passing to the kerf and accumulating on the band saw blade; wherein

each of the set teeth comprises a relief surface and a cutting surface, the relief surface extending from one side of the tip in a direction opposite that of the cutting

direction movement of the band saw blade and terminating at one end of an intermediate surface, and the cutting surface extending from another side of the tip;

the shelf comprises a shelf surface extending from the cutting surface and terminating at [[art]] another end of the intermediate surface; and

the shelf surface comprises a first portion that is generally parallel to the back edge and a second portion that is disposed at an acute shelf surface angle [[A2]] that extends in a direction opposite the cutting direction and toward ~~relative to~~ the back edge of the band saw blade.

13. (Currently amended) The band saw blade of claim 12 wherein the shelf surface angle [[A2]] is within the range of approximately 10° to approximately 20°.

14. (Previously presented) The band saw blade of claim 12 wherein:  
the second portion comprises about one third of the length of the shelf surface;  
and the shelf surface angle [[A2]] is approximately 15°.--.

Appropriate correction is required.

### ***Double Patenting***

4. Applicant is advised that should claims 31-33 be found allowable, claims 38-40 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof (or vice versa as appropriate). When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in

wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 112, 1<sup>st</sup> paragraph***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 2, 5, 9-11, 21, 22, 25-30, 34-37, 48 and 49 are rejected under 35

U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The original disclosure does not provide support for a blade wherein "at least a portion of the shelf is oriented at an angle of at least about 90 degrees relative to a back edge portion of the blade in a cutting direction of the blade" as now set forth in claims 1, 27 and 34. Rather, support is provided for the shelf being oriented at an angle of between approximately 10 degrees and approximately 20 degrees relative to a back edge portion of the blade in a cutting direction of the blade (e.g., see the second paragraph on page 8 of the specification).

***Claim Rejections - 35 USC § 112, 2<sup>nd</sup> paragraph***

7. Claims 31-33 and 48-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 31, line 10, "said means" lacks antecedent basis.

In claim 48, line 5, "an acute with respect to the remaining portion of the respective side of the tooth" appears to be inaccurate, and it seems that it should be rewritten as -- an acute with respect to a plane defined by the remaining portion of the respective side of the tooth-- or the like.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 3, 31 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakahara, pn 6,834,573.

**Regarding claim 1**, Nakahara discloses a saw blade with every structural limitation of the claimed invention including:



a cutting edge defined by a plurality of teeth (e.g., 3, 5, 7), spaced relative to each other, and a back edge (e.g., see Fig. 1B) located on an opposite side of the band saw blade relative to the cutting edge, the plurality of teeth comprising a plurality of set teeth (e.g., 5, 7), each set tooth defining a tip (e.g., 13 (shown for tooth 3, but the same for teeth 5, 7 according to the disclosure at, for example, col. 4, lines 62-65)), a bend plane (e.g., see Figs. 1C, 3), and a shelf (e.g., formed by 11, 21 (shown for tooth 3, but the same for teeth 5, 7 according to the disclosure at, for example, col. 4, lines 62-65)) located at least partially between the tip and the bend plane (e.g., see Fig. 3) for reducing saw dust passing to the kerf and accumulating on the band saw blade;

wherein:

each of the set teeth has a dimension (S1) defined as the distance between the tip and the shelf of the respective tooth;

each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and

a tip of S1/B is within the range of approximately 1/4 to approximately 3/4 (e.g., as shown in Fig. 3, Nakahara clearly teaches the recitation of "approximately 1/4" to one having ordinary skill in the art).

**Regarding claim 31**, Nakahara discloses a saw blade with every structural limitation of the claimed invention including:

a base having a back edge (e.g., see Fig. 1B);

a cutting edge defined by a plurality of teeth (e.g., 3, 5, 7) spaced relative to each other and being located on an opposite side of the band saw blade relative to the back

edge, the plurality of teeth comprising a plurality of set teeth (e.g., 5, 7), each set tooth defining a tip (e.g., 13 (shown for tooth 3, but the same for teeth 5, 7 according to the disclosure at, for example, col. 4, lines 62-65)), a bend plane (e.g., see Figs. 1B, 3), and a shelf (e.g., formed by 11, 21 (shown for tooth 3, but the same for teeth 5, 7 according to the disclosure at, for example, col. 4, lines 62-65)) located at least partially between the tip and the bend plane (e.g., see Fig. 3) for reducing saw dust passing to the kerf and accumulating on the band saw blade;

wherein:

each of the set teeth has a dimension (S1) defined as the distance between the tip and said means of the respective tooth;

each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and

a ratio of S1/B is within the range of approximately 1/4 to approximately 3/4 (e.g., as shown in Fig. 3, Nakahara clearly teaches the recitation of "approximately 1/4" to one having ordinary skill in the art);

**Regarding claim 38**, Nakahara discloses a saw blade with every structural limitation of the claimed invention including:

a base having a back edge (e.g., see Fig. 1B);

a cutting edge defined by a plurality of teeth (e.g., 3, 5, 7) spaced relative to each other end being located on an opposite side of the band saw blade relative to the back edge, the plurality of teeth comprising a plurality of set teeth (e.g., 5, 7), each set tooth defining a tip (e.g., 13 for teeth 5, 7), a bend plane (e.g., see Figs. 1B, 3), and a shelf

(e.g., formed by 11, 21 (shown for tooth 3, but the same for teeth 5, 7 according to the disclosure at, for example, col. 4, lines 62-65)) located at least partially between the tip and the bend plane (e.g., see Fig. 3) for reducing saw dust passing to the kerf and accumulating on the band saw blade;

wherein:

each of the set teeth has a dimension (S1) defined as the distance between the tip and the shelf of the respective tooth;

each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and

a ratio of S1/B is within the range of approximately 1/4 to approximately 3/4 (e.g., as shown in Fig. 3, Nakahara clearly teaches the recitation of "approximately 1/4" to one having ordinary skill in the art).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is

advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 4, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara, pn 6,834,573.

Nakahara discloses a saw blade with almost every structural limitation of the claimed invention but lacks the specific ratios and dimensions set forth. However, these ratios and dimensions would be the mere discovery of the optimum or workable ranges within the general conditions of the prior art and therefore obvious to one having ordinary skill in the art.

12. Claims 23, 24, 32, 33, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara, pn 6,834,573 in view of Japanese Publication 6-716 (hereafter JP '716).

Nakahara discloses a saw blade with almost every structural limitation of the claimed invention but lacks:

[claim 23 (from 3); claim 32 (from 31); claim 39 (from 38)] wherein:

the plurality of set teeth each comprise a second shelf;

each second shelf comprises a second shelf surface, and each second shelf defines a dimension (S2) extending between the tip of the respective tooth and the second shelf;

[claim 24 (from 23); claim 33 (from 32); claim 40 (from 39)] wherein  $S2=(B+S1)/2$  and S1 is within the range of between approximately .13 inch and approximately .16 inch.

Regarding claims 23, 32 and 39, such second shelf configurations are old and well known in the art and provide various well known benefits including facilitating the accommodation of various sizes of chips and chips formed from various types of materials. JP '716 discloses such a second shelf (e.g., see Fig. 6). Therefore, it would have been obvious to one having ordinary skill in the art to provide such a second shelf on the saw blade of Nakahara for the well known benefits including those described above.

Regarding claims 24, 33 and 40, the combination of Nakahara and JP '716 teaches a saw blade with almost every structural limitation of the claimed invention but lacks the specific ratios and dimensions set forth. However, these ratios and dimensions would be the mere discovery of the optimum or workable ranges within the general conditions of the prior art and therefore obvious to one having ordinary skill in the art.

#### ***Allowable Subject Matter***

13. Claims 12-14 appear that they would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

***Response to Arguments***

14. Applicant's arguments with respect to claims 1, 2, 5, 9-11, 21, 22, 25-30, 34-37, 48 and 49 have been considered but are moot in view of the new ground(s) of rejection.

15. Applicant's arguments filed May 22, 2007 and October 12, 2007 have been fully considered but they are not persuasive.

In the second paragraph on page 11 of the amendment filed on October 12, 2007, applicant argues that the prior art device is used to cut metal not wood. However, the Examiner's position is not that the prior art is used in the same manner as the claimed invention, but rather that it discloses all of the structure of the claimed invention.

In the third paragraph on page 11 of the amendment filed on October 12, 2007, applicant argues that the prior art does not disclose the shelf oriented at an angle of at least 90 degrees to a back edge portion of the blade in a cutting direction of the blade." However, it is respectfully submitted that, while the Examiner agrees that such a limitation is not met by the prior art, such a limitation is also not supported by the original disclosure of the present invention.

Regarding the claimed ratio, the Examiner respectfully maintains that the Nakahara teaches the claimed angle as described in detail in the corresponding prior art rejection above.

For at least the above reasons, it is respectfully submitted that the prior art rejection must be maintained.

***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clark F. Dexter whose telephone number is (571)272-4505. The examiner can normally be reached on Mondays, Tuesdays, Thursdays and Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer D. Ashley can be reached on (571)272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**Clark F. Dexter**  
**Primary Examiner**  
**Art Unit 3724**

cfd  
January 18, 2008